# Video Recording

## OPERATION GUIDE

for

Gov Video Recorder 9
Court Video Recorder 9

## About This Manual

This manual covers the installation procedures for the video recording using SoniClear software and systems, including the following products:

- SoniClear Gov Video Recorder 9
- SoniClear Court Video Recorder 9
- Axis Video Camera Kit
- Axis Video Encoder Kit

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# SoniClear Video Recording

## Overview

SoniClear video recording products are designed to make it easy to capture digital video along with digital audio. The software works with compatible Axis video cameras and encoders, and keeps the audio and video synchronized during playback. The user can select audio from any microphone or the microphone in the camera while viewing synchronized video of the event. The current release supports a single Axis camera or encoder that is connected via Ethernet. Future releases will support up to four Axis IP video cameras simultaneously.

## SoniClear Video Kits

SoniClear Video Camera Kits are available for use with Gov Video Recorder and Court Video Recorder. The kits include either an Axis camera, or an Axis video encoder for connection to an existing video camera or video switcher. The kits also include all of the required parts to start video recording quickly and easily.

### Axis Video Camera Kit

The Axis Video Camera Kit includes the following hardware:

- Axis M1054 video camera
  www.axis.com/products/cam_m1054
- A desktop tripod with an adapter for mounting the M1054 camera.
- Axis POE Power Injector for remotely powering the camera.
- Flexible 25’ Ethernet cable for connecting camera to the Power Injector.
- Standard 6’ Ethernet cable for connecting the Power Injector to the computer.
- StarTech Ethernet crossover adapter,

## Axis Video Encoder Kit

The Axis Video Encoder Kit includes the following hardware:

- Axis Q7401 video encoder
  www.axis.com/products/cam_q7401

- BNC to RCA composite video adapter. (Note: User must provide a cable for connection to a standard composite video source, such as a professional camcorder or video switcher.)

- Axis POE Power Injector for remotely powering the encoder.

- Flexible 25’ Ethernet cable for connecting camera to the Power Injector.

- Standard 6’ Ethernet cable for connecting the Power Injector to the computer.

- StarTech Ethernet crossover adapter,

## Recommended Optional Equipment:

The follow equipment can be used with the Axis Camera Kit and the Axis Encoder Kit to optimize the configuration for various requirements:

- SoniClear Portable Recorder System. This is a Fujitsu business-class laptop with an i5 processor, and large 7200 RPM disk drive.
  http://www.soniclear.com/Portable_Recorder.html

- Ethernet POE switch for connecting both the camera device and a network connection to a single Ethernet jack on the computer. The POE power output from the switch eliminates the need to power the camera using a power brick or POE Injector. Recommend switches:

  - Netgear GS108PE, which supports up to 4 video cameras
    www.bhphotovideo.com/c/product/833615-REG

  - D-Link DES1005P, which is smaller, less expensive, and supports one camera
    www.bhphotovideo.com/c/product/859848-REG

- Microphones for recording audio. Any SoniClear compatible microphone will work with video, including multichannel recording interfaces, such as the Motu 4Pre and Motu 8PreUSB:

  http://www.soniclear.com/Products.html#Computer_Microphone_Products

# Recording with the Video Recording Kit

## Using the Video Camera Kit

The Video Recording Kit with the Axis M1054 Camera is supplied ready to use. Once the SoniClear software has been installed and the computer has been configured for video, you can start recording using these setup steps:

1. Set up the computer and microphones as required for the recording.
2. Set up the Axis camera on the supplied desktop tripod, or other user-supplied tripod.
3. Plug the 25’ Ethernet cable into the Axis camera.
4. Plug the other end of the 25’ Ethernet cable into the Power Injector (such as the Axis T9120). Be sure to use the jack labeled “Data & Power Out”.
5. Plug the 6’ Ethernet cable into the jack labeled “Data In” and plug the other end of the cable into the Ethernet jack in the laptop or desktop computer.
6. Run SoniClear and record as directed in the SoniClear Users Guide.

## Using the Video Encoder Kit

The Video Recording Kit with the Axis Q7401 Encoder is supplied ready to use. Once the SoniClear software has been installed and the computer has been configured for video, you can start recording using these setup steps:

1. Set up the computer and microphones as required for the recording.
2. Connect the Axis Q7401 encoder to the composite video output of the existing camera or video switching unit.
3. Connect the Axis encoder to the supplied Axis T9120 Power Injector. Be sure to use the jack labeled “Data & Power Out”.
4. Plug the 6’ Ethernet cable into the jack labeled “Data In” and plug the other end of the cable into the Ethernet jack in the laptop or desktop computer.
5. Alternatively, connect the Q7401 directly to the computer and power it using the included encoder power supply.
6. Run SoniClear and record as directed in the SoniClear Users Guide.

# Setting Up the SoniClear System

The SoniClear Portable Recorder system is ready to use for video recording without the need for additional configuration steps. If you are using SoniClear software with your own computer, you will need to perform the configuration and installation steps listed in this section.

## Hardware Requirements

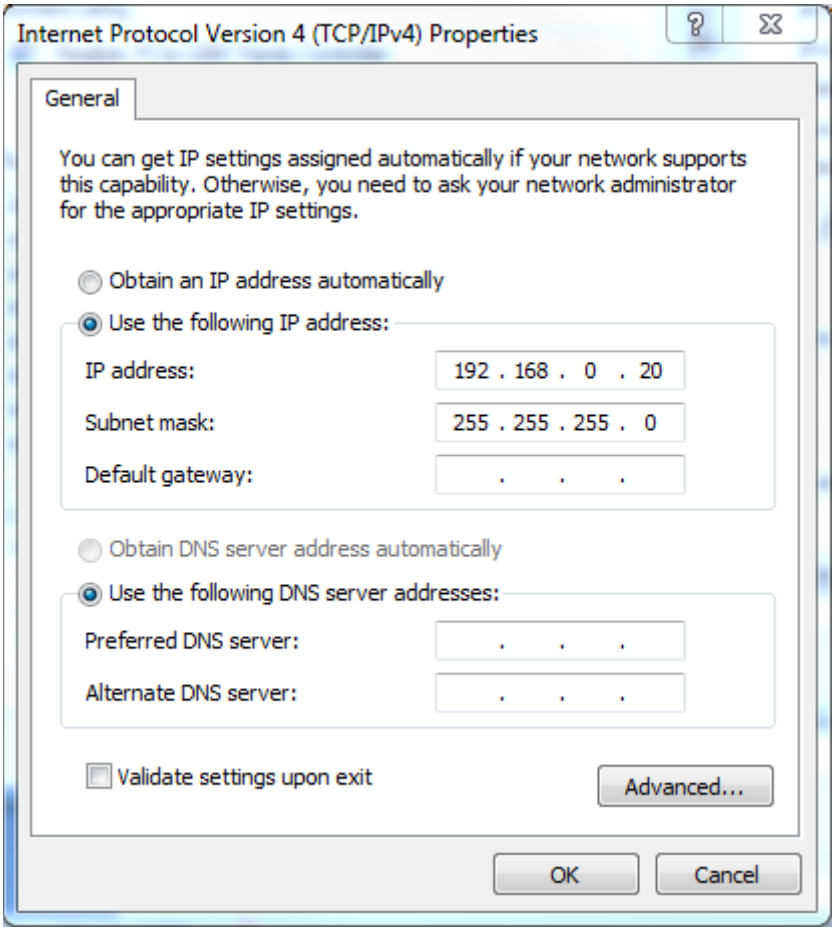
The SoniClear video recording requires a computer that has the following minimum hardware specifications:

- Intel-based desktop or laptop computer with i5 or i7 processor.
- Windows 7 Operating System (64-bit recommended).
- System has been tested and passes the DPC Latency requirements listed in the SoniClear Installation Guide or the Court Recorder Installation Guide.
- SoniClear-compatible microphones.

## Network Address Configuration

If the camera is connected to the laptop (either directly using a crossover cable, or indirectly through an Ethernet switch), the laptop will need to be configured to connect to the camera without the use of an Ethernet router to assign an IP address. This is accomplished by setting a fixed IP address in the laptop network settings (Windows 7 instructions):

1. Open the Network and Sharing Center: select Start/Control Panel/Network and Sharing Center.
2. Click Change Adapter Settings link in left column.
3. Double click on Ethernet adapter entry to open the Connection Status dialog for that adapter.
4. Click the Properties button.
5. Double click on the Internet Protocol Version 4 entry to open the Local Area Connection Properties dialog.
6. Select the option “Use the following IP address”.
7. Set the IP address to 192.168.0.20 (or similar address on the same “subnet”).
8. Uncheck the option “Validate settings upon exit”.


Internet Protocol Version 4 (TCP/IPv4) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 0 . 20
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Validate settings upon exit
Advanced...
OK
Cancel

9. Make sure the Subnet mask is set to 255.255.255.0 and click OK.
10. Make sure the “Default gateway” field is blank (since there is no gateway used in this connection).
11. Make sure the DNS fields are also blank.
12. Click OK to close the Local Area Connection Properties dialog. This may display a diagnostic error dialog because this setting does not support connection to the Internet. Dismiss these dialogs.
13. Disconnect any Ethernet cable if it is not connected to the Axis camera.
14. Reboot the computer.
15. The computer will reset the Ethernet port to the new static address set in the Alternate Configuration dialog when you connect to the camera.

16. To confirm the port setting, make sure the camera is connected, and wait for the alternate IP address to be set (done when the little circle on the Ethernet connection turns to a warning triangle). Then click Start and enter cmd.exe into the search field. Run the cmd.exe program displayed, which will bring up a command line dialog.

17. On the command line enter the command: ipconfig. This will display the current computer IP address.

18. If the displayed IP address is not the one specified, enter the following additional commands:

    ipconfig /release
    ipconfig /renew
    ipconfig

    The release and renew steps should force the IP address to the new setting, which will be confirmed by the last ipconfig command.

19. If the IP address does not set correctly, contact SoniClear Support for assistance.

IMPORTANT NOTE: after making these setting changes, the Ethernet port can only be used for connection to the camera. Use the WiFi connection for Internet access.

## Network Device Power Settings

By default the Ethernet network hardware in the computer will have power settings enabled. This will interfere with recording of video information sent through the Ethernet connection. The power saving settings must be disabled following these steps:

1. Open the Network and Sharing Center: select Start/Control Panel/Device Manager.
2. Open the Network Adapters section of the device list.
3. Double click on the Ethernet network device. (If there is more than one Ethernet device, configure the device that will be connected to the Axis camera).
4. In the device properties dialog select the Power Management tab.
5. The options displayed for power management will vary, depending on the type of network device. The generic option is “Allow the computer to turn off this device to save power”. This should be unchecked. For Intel network devices the dialog will display is a set of options under the section “Power Saver Options”. Uncheck all of these options to fully disable power saving.
6. Click OK .
7. Close all programs and reboot the computer.

## NOD32 Antivirus Setup

SoniClear has been tested for compatibility with the Eset NOD32 antivirus product. SoniClear video recording has not been tested with any other antivirus product and only NOD32 is recommended and supported.

By default the NOD32 antivirus scanning product tries to monitor the recording files being written by SoniClear. With audio this generally does not interfere. However, with the high data volume produced by video recording the antivirus product can introduce processor overhead and disk drive delays that will cause problems.

To prevent this type of interference, add exclusions in the antivirus software setup for the following file types:

*.video
*.index
*.state
*.mp3
*.bkc
*.bkm

Adjust the settings for NOD32 following these steps:

1. Open the Eset NOD32 control panel: Click the Start button, click All Programs, scroll down and click Eset folder and the Eset NOD32 folder, then click the Eset NOD32 program icon.
2. In the NOD32 window click the Setup link in the left panel.
3. Click the link “Enter advanced setup…” in the right panel.
4. Double click on the Computer link to open that section.
5. Double click on the “Antivirus and antispyware” link to open that sub-section.
6. Click on the Exclusions link to open the Exclusion editing panel.
7. Click the Add button and enter an exclusion item listed above (such as *.video).
8. Repeat the Add operation to add all of the file exclusions.
9. Click OK to close the setup window.

## Configure Windows Firewall

After the SoniClear software has been installed the Windows Firewall must be modified to allow access from the SoniClear software to the Axis camera or encoder. Follow these steps:

1. Click Start button and select Control Panel.
2. Ensure that “Small Icons” is set as the display type.
3. Click on Windows Firewall.
4. Click on link in left column, “Allow a program or feature through Windows Firewall”.
5. Click the Change Settings button.
6. Click the Allow Another Program button.
7. If SoniClear 9 is shown on the list of programs:
    a. Select SoniClear 9 on the list.
    b. Click the Add button.
8. If SoniClear 9 is not shown on the list, continue:
    a. Click the Browse button.
    b. Navigate to the folder were SoniClear was installed, select the SoniClear9.exe program, and click Open.
    c. Click the Add button.
9. Ensure that both of the check boxes for SoniClear 9 allowing access on Home/Work and for Public networks are checked.
10. Click OK button.
11. Close Control Panel.

## Install Axis Video and Audio Software

Software for the Axis camera must be installed on the recording computer. Run the Axis software installation program provided with the Video Recording Kit and following the instructions on screen:

InstallAxisCameraSoftware.exe

If you are using the MJPEG video encoding option there are no additional Axis software requirements. If you are using H.264 video, however, you will need to install the Axis software on all workstations that will be playing video recorded in H.264 format. Run the provided Axis Camera Software Installer on each playback computer to install the H.264 and AAC decoders required for playing these types of recordings.

The SoniClear video software and solution kits provide a license package that allows for installation of the H.264 and AAC decoders included in the Axis Camera Software Installer.

If you wish to install the Axis camera software on more systems than provided by SoniClear or the Axis cameras being installed, a 50-unit license pack (Axis part number 0160-060) must be purchased first. Contact SoniClear to purchase this license product. It can also be purchased from any Axis distributor, or as a drop-ship item from B&H:

http://www.bhphotovideo.com/c/product/600593-REG/

IMPORTANT LICENSING INFORMATION: A single license for the H.264 and AAC decoders is included with each camera or encoder device. Before running the Axis Camera Software Installer on more than one recording or playback computer you must have a license for the decoders that will be copied to each computer in this installation process. A copy of the license agreement is included with the decoder license package. Some applications, such as commercial recording and distribution of video content for profit, may require additional licensing arrangements with MPEGLA, the patent licensing organization for H.264 and AAC. More information is available on their website at: www.mpegla.com. See the section “Request A License”, and “AVC/H.264 License Agreement”.

## Install SoniClear 9 Software

Install the SoniClear software following the directions in the SoniClear Installation Guide for Gov Video Recorder, and the Court Recorder Installation Guide for Court Video recorder.

## Configure SoniClear 9 Software Preferences

The SoniClear Gov Video Recorder and Court Video Recorder preferences must be modified for video recording. This includes enabling video support, specifying how to connect to the video camera, and video options.

The steps for editing the SoniClear preferences are:

1. Select the Edit/Preferences/Recording Options dialog

2. Check the Enable Video option.

3. If you want to enable audio capture from the camera or encoder, check the "Include camera audio" option. This is the recommended setting.

4. For MJPEG encoding, enter the following URL string:
   **axmphttp://192.168.0.90/mjpg/1/video.mjpg**

   For H.264 encoding enter the following URL:
   **axrtsphttp://192.168.0.90/axis-media/media.amp?videocodec=h264**

   Note: H.264 provides higher quality encoding and dramatically smaller file sizes. It also provides support for encoding the audio in AAC format from the camera or encoder. However, H.264 and AAC encoders require licensing for recording and playback. See the section "*Install Axis Video and Audio Software*" above for details.

5. For the User field enter:
   root
   (or other valid user account on the Axis camera).

6. Enter in the Password field:
   Use password assigned to the camera during setup.

7. Set the Adjust Video Frame field to:
   0 (the number zero)
   Note: this may need to be adjusted based on characteristics of the sound card in this computer.

After setting this information in the preferences, exit and restart the program. The Video Preview window should be displayed on the screen. If not, contact SoniClear Support for assistance.

## Transcriber Live Configuration

Transcriber Live supports video monitor and video playback functionality. This feature must be configured in Edit/Preferences/Recording Options by checking the Enable option in the Video section.

To allow playback of camera audio in addition to microphones recorded in the audio channels, select the “Include Camera Audio” option. This will enable the selection of camera audio in the Channel selection control during playback of recordings that have camera audio.

## SoniClear Player Configuration

SoniClear Player (in Export CD Image and Manage LAN Archive) supports video monitor and video playback functionality. This feature is enabled by default. To disable video, uncheck the Enable check box in the Video section of the Edit/Preferences/Recording Options dialog.

## Configure Camera Audio Playback

When playing back camera audio in Court Recorder 9 or Gov Recorder 9, the sound will be played through the current default Windows audio output device. This can be set in the Windows Sound control panel. The audio device selection can be the same output device that SoniClear uses for playback (headphones or speaker), or a different device.

# Custom Video Configuration

The Axis camera or encoder can be purchased from an Axis dealer or distributor instead of using the SoniClear Video Recording Kit. The following section describes how to set up the recording system using stock Axis components.

## Connecting the Axis Camera

The Axis camera option is connected to the computer using an Ethernet cable. Two options are available for this. A standard Ethernet cable can connect the camera to an Ethernet switch, with the laptop connecting to the switch also. Or the camera can be connected directly to the computer using a Crossover cable (or regular cable with a Crossover Adapter). Some computers will automatically detect the need for a crossover connection and will switch the send and receive lines in the Ethernet chip, in which case a crossover cable or adapter will not be needed.

The camera can be powered using the included power transformer "brick". It is recommended, however, to power the camera using the included Power Over Ethernet ("POE"). This allows the camera to be placed anywhere in the room without the need for a separate power extension cord for the power transformer. The source of power for POE can either be a POE-enabled Ethernet switch, or a POE "injector" that is placed in-line with the Ethernet cable going to the camera. The POE switch or injector can be placed next to the laptop and powered off the same power strip the computer is plugged into.

## Connecting the Axis Encoder

The Axis encoder option is also connected to the computer using an Ethernet cable, in the same was as described above for the Axis Camera.

The video signal is sent to the encoder using a standard composite video signal with a BNC video connector. An adapter converting from RCA to BNC will be required for use with standard RCA composite video cables. An equivalent part to the one included in the Axis Encoder Kit is:

www.bhphotovideo.com/c/product/547721-REG/

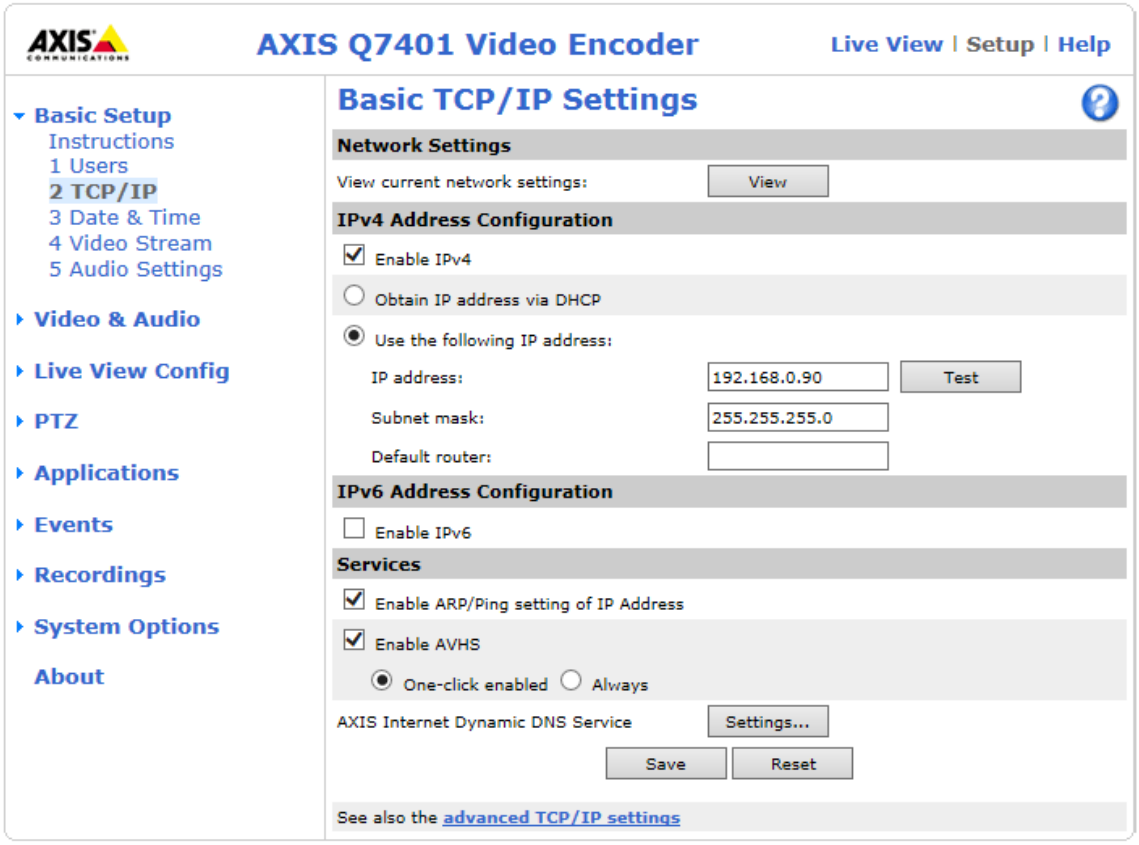
The audio signal from a sound system, Motu 4Pre or 8PreUSB should be connected to the 1/8" input jack on the encoder. For this type of setup be sure to configure the audio input as a line-in device when setting up the encoder (see setup instructions below).

## Configure the Axis Device

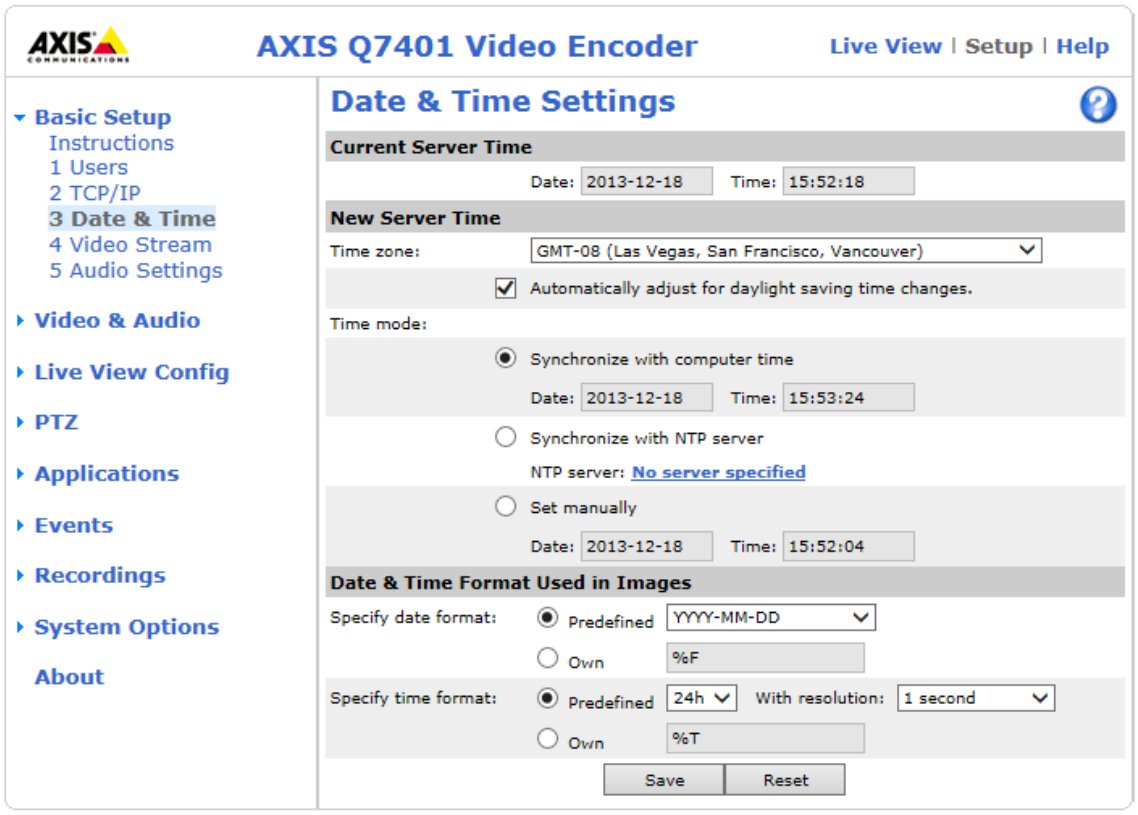
Configure the Axis Device using the following steps:

1. Open the Windows Internet Explorer browser (also works with Firefox).
2. Enter the URL address of the camera (the IP address number): 192.168.0.90
3. The first time you access the camera you will be required to enter a password for the “root” account.
4. When the browser finishes connecting to the camera or encoder it will display a “Live View” of the video stream.
5. Switch to the setup view by clicking on “Setup” link in upper right corner of the page.
6. Under the Basic Setup section, you can adjust the following items.
7. Select the “Users” link to enter user access information. The default user, “root”, can be used for accessing the camera. Alternatively, you can create a non-administrator user in this screen to keep the administrative password for the device secure.

8. TCP/IP: The default setting is for a fixed IP address at 192.168.0.90, as follows:

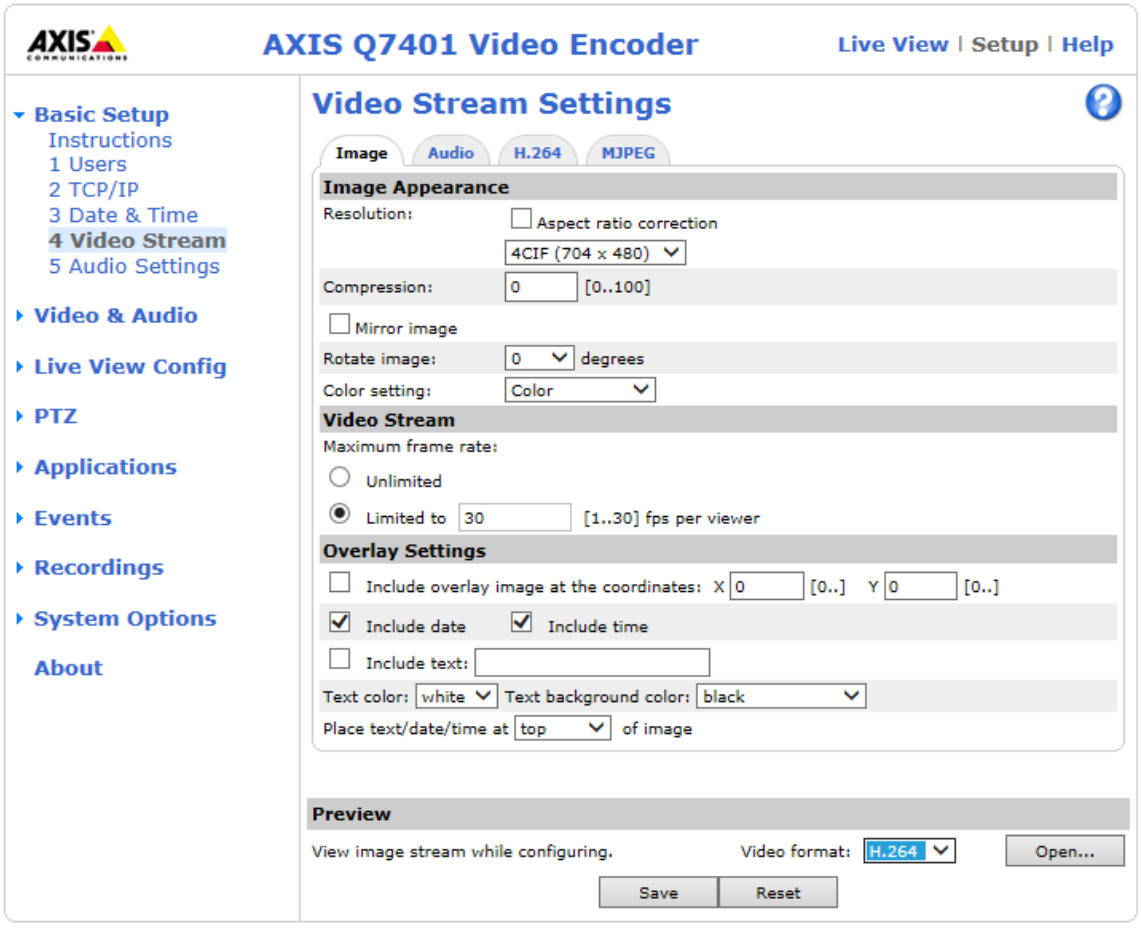


9. Date & Time: The camera should be set to sync with the computer:




Alternatively, you could set the time option to sync with an NTP server, if the camera is connected to a network that has an NTP server behind the firewall, or Internet access to a public NTP server.

10. Video Stream: this controls the default settings for streaming video data. Set the image preferences in the Image tab:



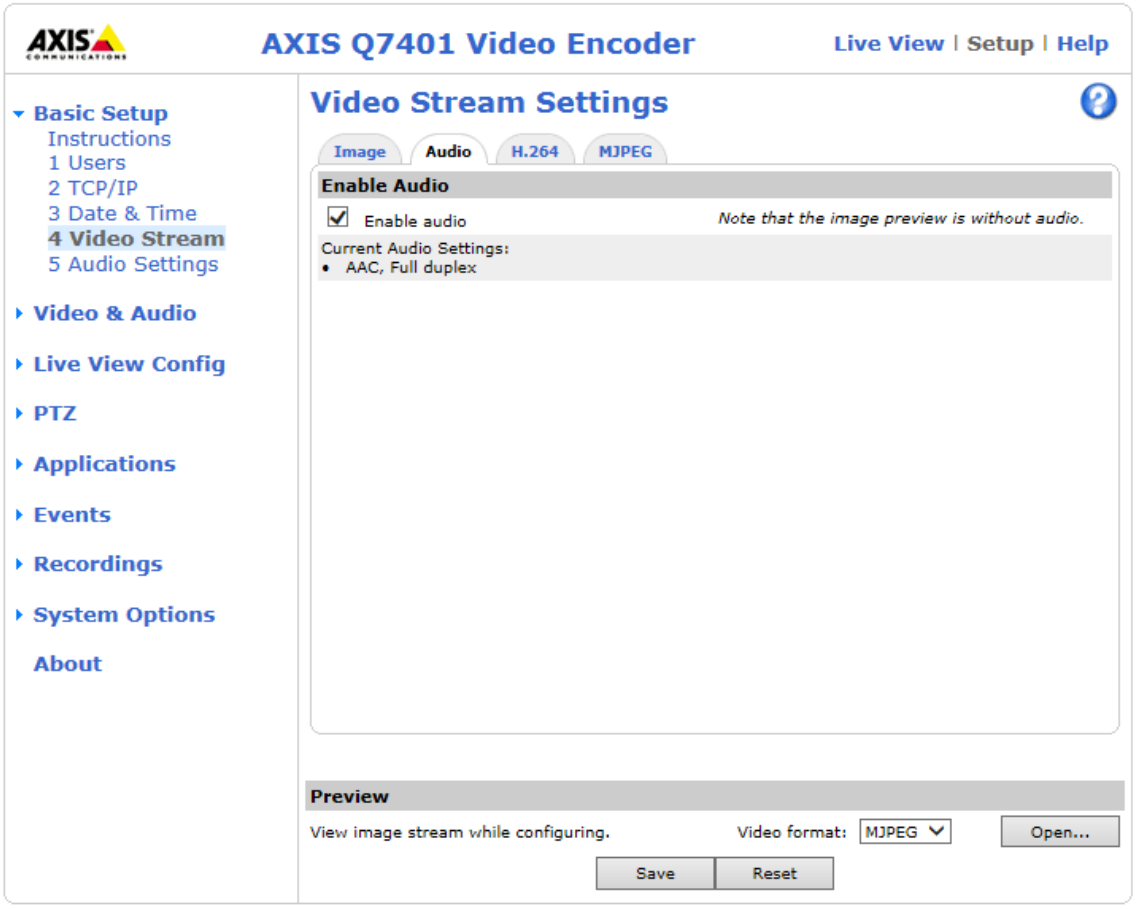

For the Axis Encoder, set the Resolution to match with resolution of the external video source, or a smaller resolution for recording (if preferred). For the Axis Camera, set the resolution to the desired resolution for recording.

Set Compression to 0 for maximum clarity. The manufacturer default value of 30 produces less clear recordings that take up less disk space.

Set Video Stream to Limited, with a value of 30.

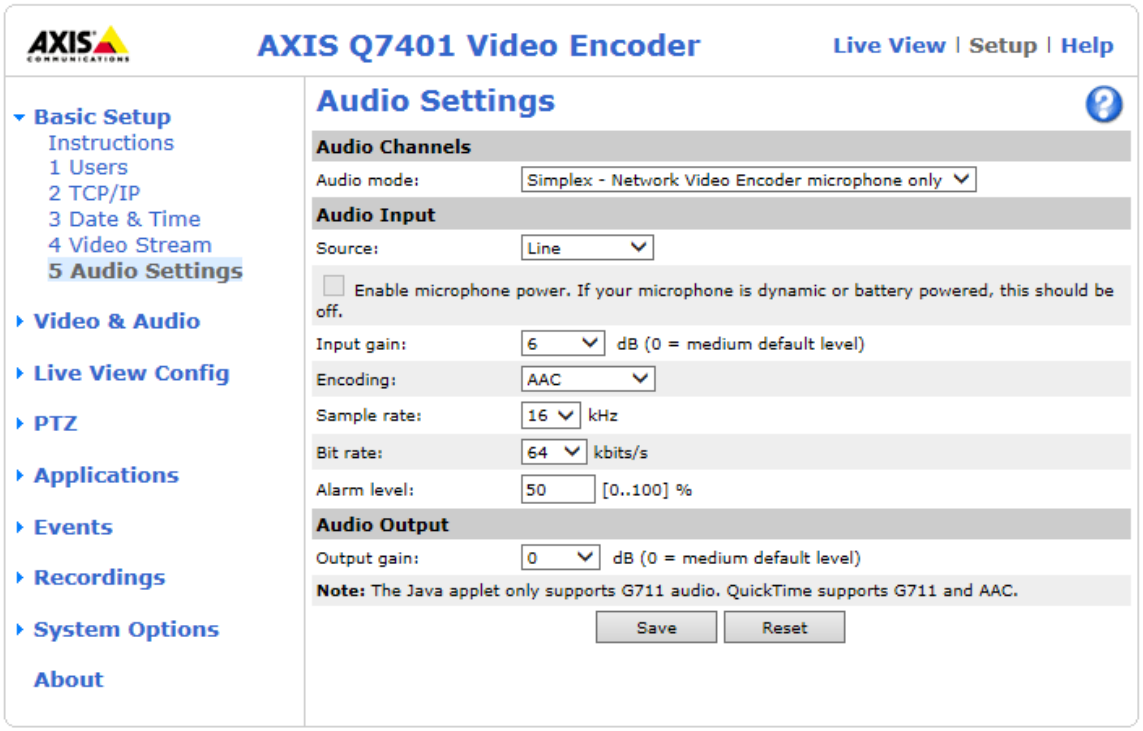
Set the Overlay Settings fields, "Include date" and "Include time", if you want the image to be timestamped in the video feed.

11. In the Audio tab, select the “Enable audio” option if you want to record audio from the camera or the encoder:




The settings in the H.264 and MJPEG tabs can be left as their default values.

12. Audio Settings: For recording audio from the camera or encoder, set up the audio options:




Select the Simplex microphone option (you do not want audio from the computer to be sent to the speaker in the camera, for example).

For the Axis Encoder, set the input source to the correct type of audio input (microphone or line).

Set the input gain to provide the desired signal level in the recording. This will require experimentation to determine the optimum value.

Set the Encoding option to AAC, 64 kbits/s.

# Hardware Warranty and Repair

Any hardware included in a SoniClear video recording kit is covered by the Limited Warranty provided by the manufacturer. SoniClear does not provide hardware repair services. SoniClear will coordinate repair services and ensure proper installation of the SoniClear software installed on the computer, on customer request.

# Hardware Information:

Hardware Model: _____

Hardware Serial Number: _____

SoniClear Order Number: _____

SoniClear Purchase Date: _____

Axis Camera Login User: _____

Password: _____

Note: :For security reasons, the default password supplied with the system should be changed before deploying the video recording system.